



# Genova AMT Pilot

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AMT Genova

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**AMT Genova**

**AMT, 120  
years of  
transport  
services in  
Genoa.**



# AMT – Public Transport: the Company

## The location

- **Genoa, Liguria Chief Town**
- **The Province of Genoa**

AMT Genova is the mobility in charge of providing **public transport to Genoa and the nearby area of the Province of Genoa** (about 2,000 Sq.Kms – 862,175 inhabitants)

By a multi-modal transport system, counting over 130 million transfers per year covering **27 million kilometres**, AMT suits the Genoese transport requirements best.

The multi-modal system is granted by different means of transport:

- **buses,**
- **trolley buses,**
- **a subway,**
- **funicular railways,**
- **a cog railway,**
- **a narrow-gauge railway,**
- **a urban ferry-boats and**
- **on-call services.**





# AMT – Pilot Location

The Genoa Pilot will be taking place in the area surrounding the Genoa Piazza Principe railway station.

The area is particularly interesting because it represents the interchange between different means of public transport:

- **Railway, in the Genova Piazza Principe station;**
- **Subway**, with one of the main stops in Genoa – namely Principe Subway stop;
- **Public transport bus service** including terminals and bus stops connecting the Principe Hub with the rest of the city center, with the upper part of Genoa and with the Genoese suburbs
- **Rack railway** connecting Principe with the overlying district of Granarolo;
- Other means of transport:
  - Taxis;
  - Car Sharing;
  - Private bus terminals for lines directed to National and International long-distance services;
  - Cruises and ferries, with the nearby Maritime Station



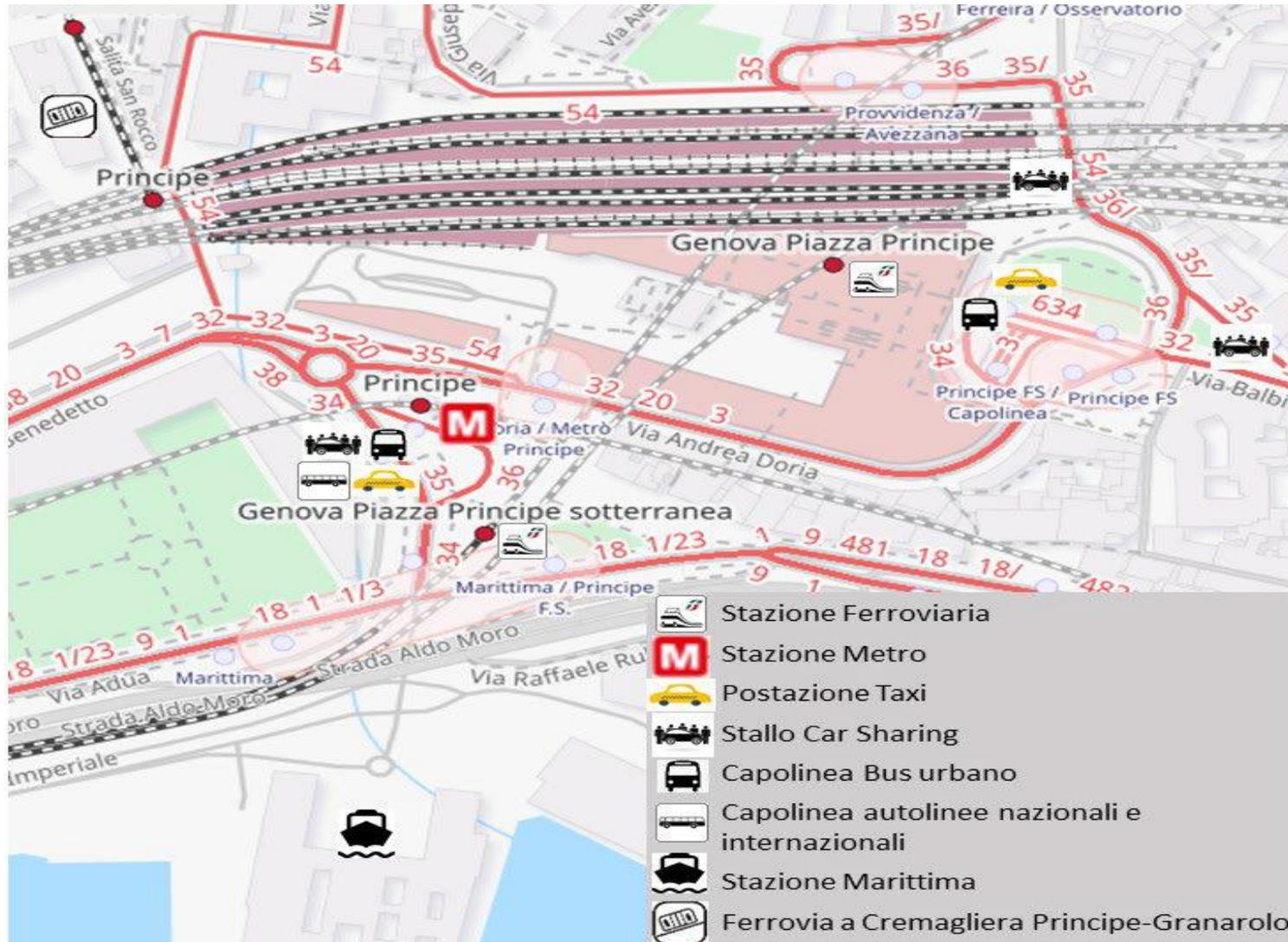


# AMT – Pilot Location





# Overview of the Hub





# AMT – The subway



## Genova's Subway



**Operating line**  
**(More lines are under construction)**



## Infrastructure:

### Genoa Subway, in particular the Principe Stop at the Principe Hub

Genova Principe Hub is an important local and regional transit hub for both commuters and tourists and it's the second station of Liguria's main city. The hub is a short walk away from the center and offers a wide range of facilities like shopping, services and restaurants.

It covers both the urban and extra urban transport service and AMT has there main bus stops and the Genoese subway.



# AMT – Pilot Scope

## Pilot Scope:

- Covering locations at the Principe Hub the main goal is to **detect abandoned luggage in the platforms of the subway and platforms of the buses and tracking of the owners on a weekday at rush hours.**

## The planned use cases:

- Items/Luggage abandoned:
- In the subway area (evaluate to extend the pilot on board of the trains)
- In the bus station, on the platforms (evaluate to extend the pilot on board of the trains)



# AMT – The Threats

## Specific security threats

- Unattended items is a constant threat in public transports because has a high frequency, and poses a significant security challenge



## AMT Relevant resources involved in the pilot

1) **Technical group:** the AMT technical team will be in charge of supervising the installation of the servers and the target infrastructure, monitoring the work of the suppliers and technically evaluating the solutions according to the identified KPIs;

2) **Legal Office** in AMT: A legal team will ensure the smooth running of the pilot and the respect of the individual freedoms of customers (data protection and Ethics compliance);

3) **Operational group** in AMT including:

- The Video Operators in AMT: centralize the CCTV flows that allow video operators to follow the live streams in case of security events. The detection alarms of the pilot will be centralized in these centers, on dedicated operator stations. The video operators and the security teams are the end users of the solution.
- The Officers on board of AMT subway trains and buses. The officers will be guided by video operators in case of alert, to find the owner of an unattended item.



# AMT – Systems and Processes involved

## Relevant security systems involved/processes involved

- Writing of a Data Impact Analysis and an Ethical Assessment;
- Display of information at the station to inform customers of the pilot's purposes;
- Update of the website/social.... to inform customers on the scope of the pilot;
- Assessment of the non-biometric nature of the solutions by developing adequate tests;
- Implementation of IT security measures;
- Signature by the volunteers who will carry out the simulations at the station of an authorization for image rights (ethics regulations and GDPR);
- Implementation of a traceability process

## Security Systems involved in the pilot:

CCTV network (AMT + other systems if possible)

## Processes involved in the pilot:

- The video operators in OCC and the field security officers: the video operators will receive alerts at the Operational Command Centre at AMT in case of detection of an unattended item and will guide officers to find the owner, using the tracking tool.
- Use of other security procedures
- Evaluation of Police procedures and possible consequent actions.





# AMT – First expected actions on the Pilot

## Pilot

- CCTV in place to be implemented (on board of the subway trains/on subway platforms/on the area outside the subway station)
- Implementation of +20 CCTV (CCTV set in place – platform, yellow line and exit)
- Monitoring of the area inside/outside subway station
- Anomalies detected
- IoT assisting in alarming the AMT Officers on hub
- Evaluation of the situation/alarm levels and security assessment
- Alarming Police Officers when needed





# AMT – Innovation

## Expected innovation

To prevent unattended items in a public transportation environment with the implementation of technologies based on video analytics algorithms.

These technologies will be integrated into the video network already deployed in AMT.

The solution will have to detect, in real time, an unattended item; then immediately identify its owner, in order to determine whether it has been left on purpose.





# AMT – Strenghts

## Strenghts

The strength of the solution will be its ability to adapt to:

- a complex and huge hub with a large flow of people (2,000 passengers/day)
- Heterogeneous equipment with good quality cameras well positioned in certain places and poor quality and different light and coverage conditions from place to place.
- Different «locations» (platforms, subway, trains and buses)



# AMT – Requirements and possible extensions

## **Requirements of the project:**

- Physical Availability (station)
- Technological Availability (possibility to install prototypes and test it, through control room/video surveillance)
- Logistic Availability (Employees, Engineering+ Safety Unit)

## **Possible extensions of the use case in AMT:**

- It will be possible to extend the testing in the AMT buses and trolley buses and funicular buses
- Extension of the testing in the whole area covered by AMT service (Genoa and its Province)
- (Passenger counting on board)





# Added Value of Genova Pilot

- Introducing Italy among the Pilot Countries (together with Portugal, Spain, France and Greece) will guarantee a more balanced contribution to the project by partner and a more representative results of the test phase
- PT Sector in Italy is characterized by **several medium and little public companies** who, together, moves the country at a local level. Having an Italian Pilot in Prevent PCP will **improve the replicability of the results** among the several operators active in PT sector, in all different modes, Associated to ASSTRA
- AMT Genoa seems to be a very representative operator because of its **multi-modal service** done trough different modes of trasport, so the replicability of the results will be facilitated
- PT Sector in **Germany** shares with Italy a similar structure of the PT service supply. Thanks to Asstra very close relations with **VDV (Verband Deutscher Verkehrsunternehmen e.V.)**, the Association of German Transport Companies who gather about 600 companies performing public passenger transport and rail freight transport in Germany, we could check the replicability of the results in the context of a Country that, for now, it's not represented in Prevent PCP Consortium, with an added value that could be recognized also by the European Commission



# PT in Italy at a glance



## Public Transport

<b>Companies</b>	<b>930</b>
<b>Employees</b>	<b>124.500</b>
<b>Passengers (boarding)</b>	<b>5,4 billions</b>
<b>Vehicles</b>	<b>More than 49.000</b>
<b>Total vehicle kilometres</b>	<b>About 1,9 billions (vehicles-km)</b>
	<b>More than 220 millions of train-km (Local railways and Trenitalia Regional railways)</b>
<b>Turn over</b>	<b>More than 12 billions of €</b>





# Italy – Genova Pilot

At the end of the test of the prototypes, Asstra, together with AMT, will organize a **technical workshop in Genova** to present the results of Genova Pilot

